IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-026889

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Notebook
Name and address of the applicant Nom et adresse du demandeur	Micro-Star Int'l Co., Ltd. 69, Li-De St. Chung Ho City, Taipei Hsien 235 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Micro-Star Int'l Co., Ltd. 69, Li-De St. Chung Ho City, Taipei Hsien 235 Taiwan
Name and address of the factory Nom et adresse de l'usine	See additional page(s)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	DC 19V; 3.42A; Class III
Trade mark (if any) Marque de fabrique (si elle existe)	msi
Model/type Ref. Ref. de type	MS-168xxxx (x = 0-9, A-Z, a-z or blank)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2001 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11016568 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 08.05.2009

Signature: Dipl.-Ing. [illegible]

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-026889

1. Micro-Star Int'l Co., Ltd.
   488 Ban Nan St.
   Chung Ho City, Taipei Hsien 235
   Taiwan

2. Micro-Star Int'l Co., Ltd.
   69, Li-De St.
   Chung Ho City, Taipei Hsien 235
   Taiwan

3. MSI Computer (Shenzhen) Co., Ltd.
   Longma Information Technology
   Industrial Park, Tangtou Village
   Shiyan Town, Baoan District
   Shenzhen, Guangdong 518108, P.R. China

4. MSI ELECTRONICS (KUNSHAN) CO., LTD.
   88E QIANJIN Rd., Kunshan City
   Jiangsu 215300
   P.R. China

Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 08.05.2009

Signature: Dipl.-Ing. F. Stoelzel

TEST REPORT

IEC 60950-1 and/or EN 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report reference No	11016568 001
Tested by (printed name and signature)	Simon Yu
Approved by (printed name and signature)	Ricky Chen
Date of issue	May 07, 2009

Testing Laboratory Name	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Address	10F, No. 219, Min Chuan Rd., Taichung 403, Taiwan
Testing location	CBTL ☒ CCATL ☐ SMT ☐ TMP ☐
Address	Same as above

Applicant's Name	Micro-Star Int'l Co., Ltd.
Address	69, Li-De St., Chung Ho City, Taipei Hsien 235 Taiwan

Test specification	
Standard	IEC 60950-1:2001 EN 60950-1:2001 + A11:2004
Test procedure	CB-scheme
Non-standard test method	N/A

Test Report Form No.	IECEN60950_1B
TRF originator	SGS Fimko Ltd
Master TRF	Dated 2003-03

Copyright © 2003 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description	Notebook
Trademark	***msi***
Manufacturer.....	Same as applicant
Model and/or type reference	MS-168xxxx (x= 0-9, A-Z, a-z or blank)
Serial number	Pre-production samples without serial numbers
Rating(s)	19Vdc, 3.42A

Copy of marking plate:

CX600
msi 微星科技
筆記型電腦 / Notebook PC
型 號 / Model NO : MS-1682
直 流 額 定 / DC Rating: 19V ⎓ 3.42A
This device complies with part 15 of the FCC rules.
Operation is subject to the following two conditions:
(1)This device may not cause harmful intererence, and
(2)This device must accept any interference received.
Includeing interference that may cause undesired operation.
The class B digital apparatus meet all requirements of
the Canadian interference Causing Equipment Regulation.
Cet appareil numerique de la class B repecte toutes les
exgences du Reglement sur le materiel brouilleur du Canada.
TÜV Rheinland Product Safe
BAUART GEPRUFT
TYPE APPROVED
N12075
AHO77
R33008
N1996
msi-MS-1452 (B)
LISTED
8G50 I.T.E.
E203413
Made in China / 中國製造

CR600X
msi 微星科技
筆記型電腦 / Notebook PC
型 號 / Model NO : MS-1683
直 流 額 定 / DC Rating: 19V ⎓ 3.42 A
This device complies with part 15 of the FCC rules.
Operation is subject to the following two conditions:
(1)This device may not cause harmful intererence, and
(2)This device must accept any interference received.
Includeing interference that may cause undesired operation.
The class B digital apparatus meet all requirements of
the Canadian interference Causing Equipment Regulation.
Cet appareil numerique de la class B repecte toutes les
exgences du Reglement sur le materiel brouilleur du Canada.
TÜV Rheinland Product Safe
BAUART GEPRUFT
TYPE APPROVED
N1996
N12075
AHO77
R33008
LISTED
8G50 I.T.E.
E203413
Made in China / 中國製造

Note: The above labels are draft of artwork for marking plates pending approval by National Certification Bodies and it shall not be affixed to products prior to such approval.

Summary of testing:

The manufacturer specified maximum ambient temperature as 40°C.

Highest load for this equipment is to copy files between HDD and memory card, connect to internet by RJ-45 port, play a video CD. Adjust LCD panel with max. brightness and speaker with max. volume. Add dummy loads of 2.5W for each USB port, charging an empty battery pack.

USB ports were compled with sub-clause 2.5 limited power source.

CPU information: Intel, Merom Core 2 Duo / Penryn processor, 2.4GHz.

There are two main boards provided for this Notebook, P/N MS-16821 and MS-16831,the big difference as below:

- Main board MS-16821: without HDMI port, 2 core chips used.
- Main board MS-16831: has HDMI port, 1 core chip used.
- Other critical components, see appended table 1.5.1 for details.

Particulars: test item vs. test requirements

Equipment mobility .....: Transportable equipment
Operating condition .....: Continuous
Mains supply tolerance (%) .....: No direct mains connection
Tested for IT power systems .....: No
IT testing, phase-phase voltage (V) .....: N/A
Class of equipment .....: III
Mass of equipment (kg).....: 2.5
Protection against ingress of water .....: IPX0

Test case verdicts

Test case does not apply to the test object ..: N/A
Test item does meet the requirement .....: P(ass)
Test item does not meet the requirement ....: F(ail)

Testing

Date of receipt of test item .....: Apr., 2009
Date(s) of performance of test .....: Apr. – May, 2009

General remarks

"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02".

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

The manufacturer's declaration, that the samples tested represent the products from each factory, is available

Comments:

Summary of compliance with National Differences (for explanation of codes see below):

EU Group Differences, EU Special National Conditions, EU A-Deviations, AR, AT, AU, BE, CA, CH, CN, CZ, DE, FR, GB, GR, HU, IL, IN, IT, KE, KR, MY, NL, PL, SG, SI, SK, US.

AR=Argentina, AT=Austria, AU=Australia, BE=Belgium, CA=Canada, CH=Switzerland, CN=China, CZ=Czech Republic, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, GR=Greece, HU=Hungary, IL=Israel, IN=India, IT=Italy, KE=Kenya, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SG=Singapore, SI=Slovenia, SK=Slovakia, US=United States of America.

For National Differences see end of this test report.

Factories:

1. Micro-Star Int'l Co., Ltd.
   69, Li-De St., Chung Ho City, Taipei Hsien 235 Taiwan
2. Micro-Star Int'l Co., Ltd.
   488 Ban Nan St., Chung Ho City, Taipei Hsien 235 Taiwan
3. MSI ELECTRONICS (KUNSHAN) CO., LTD.
   88E QIANJIN Rd., Kunshan City, Jiangsu 215300, P.R. China
4. MSI Computer (Shenzhen) Co., Ltd.
   Longma Information Technology, Industrial Park, Tangtou Village, Shiyan Town, Baoan District, Shenzhen, Guangdong 518108, P.R. China

Definition of variables:

Variable:	Range of variable:	Content:
x	0-9, A-Z, a-z or blank	Marketing purpose, no technical differences

General product information:

The equipment is Notebook Computer for general office use.

Connectors arrangment:

- Rear side: 2 USB ports. D-sub port, DC-in port, HDMI port (Main board MS-16831 only).
- Right side: 1 USB port.
- Left side: PCMCIA slot, Card reader slot, 2 Audio ports, RJ-45 LAN port.

The external power adapters are approved products which were CB-scheme evaluated according to IEC 60950-1:2001, for detail information see appended table 1.5.1.

This report contains all national deviations shown on next page as the class III equipment itself is subject of this CB report, but CB countries should investigate this matter for external adapter while the equipment under test is submitted for national approval.

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		**P**
1.5	Components		**P**
1.5.1	General	See below.	**P**
	Comply with IEC 60950 or relevant component standard	See appended table 1.5.1.	**P**
1.5.2	Evaluation and testing of components	Components not covered by IEC standards are tested under the conditions present in the equipment.	**P**
1.5.3	Thermal controls		**N/A**
1.5.4	Transformers	No insulation transformer.	**N/A**
1.5.5	Interconnecting cables		**N/A**
1.5.6	Capacitors in primary circuits .....:		**N/A**
1.5.7	Double insulation or reinforced insulation bridged by components		**N/A**
1.5.7.1	General		**N/A**
1.5.7.2	Bridging capacitors		**N/A**
1.5.7.3	Bridging resistors		**N/A**
1.5.7.4	Accessible parts		**N/A**
1.5.8	Components in equipment for IT power systems		**N/A**
1.6	Power interface		**P**
1.6.1	AC power distribution systems		**N/A**
1.6.2	Input current	See appended table.	**P**
1.6.3	Voltage limit of hand-held equipment		**N/A**
1.6.4	Neutral conductor		**N/A**
1.7	Marking and instructions		**P**
1.7.1	Power rating	See below.	**P**
	Rated voltage(s) or voltage range(s) (V) .....:	19V (no direct connection to mains supply)	**N/A**
	Symbol for nature of supply, for d.c. only .....:	d.c. symbol used.	**P**
	Rated frequency or rated frequency range (Hz) ..:		**N/A**
	Rated current (mA or A) .....:	3.42A (no direct connection to mains supply)	**N/A**
	Manufacturer's name or trademark or identification mark .....:	See copy of marking plates.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Type/model or type reference.....:	See copy of marking plates.	**P**
	Symbol for Class II equipment only .....:		**N/A**
	Other symbols .....:	Additional symbols or markings do not give rise to misunderstanding.	**P**
	Certification marks .....:	See copy of marking plates.	**N/A**
1.7.2	Safety instructions	Safety instructions are provided in user's manual.	**P**
1.7.3	Short duty cycles		**N/A**
1.7.4	Supply voltage adjustment .....:		**N/A**
	Methods and means of adjustment; reference to installation instructions .....:		**N/A**
1.7.5	Power outlets on the equipment .....:		**N/A**
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:		**N/A**
1.7.7	Wiring terminals		**N/A**
1.7.7.1	Protective earthing and bonding terminals .....:		**N/A**
1.7.7.2	Terminal for a.c. mains supply conductors		**N/A**
1.7.7.3	Terminals for d.c. mains supply conductors		**N/A**
1.7.8	Controls and indicators	See below.	**P**
1.7.8.1	Identification, location and marking .....:	The marking of the stand-by switch is located that indication of function clearly.	**P**
1.7.8.2	Colours .....:		**N/A**
1.7.8.3	Symbols according to IEC 60417 .....:	Marking for stand-by switch according IEC 60417-1, No. 5009.	**P**
1.7.8.4	Markings using figures .....:		**N/A**
1.7.9	Isolation of multiple power sources .....:		**N/A**
1.7.10	IT power distribution systems		**N/A**
1.7.11	Thermostats and other regulating devices		**N/A**
1.7.12	Language(s) .....:	Marking label and User's manual are in English. Versions in other languages will be provided when national certificate approval.	—
1.7.13	Durability	Compliance.	**P**
1.7.14	Removable parts	No required markings placed on removable parts.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.15	Replaceable batteries	Provided in user's manual.	**P**
	Language(s).....:	English.	—
1.7.16	Operator access with a tool .....:		**N/A**
1.7.17	Equipment for restricted access locations.....:		**N/A**
2	PROTECTION FROM HAZARDS		**P**
2.1	Protection from electric shock and energy hazards		**P**
2.1.1	Protection in operator access areas	The equipment is supplied from an approved power adaptor or battery pack that provides only SELV.	**P**
2.1.1.1	Access to energized parts		**N/A**
	Test by inspection .....:		**N/A**
	Test with test finger .....:		**N/A**
	Test with test pin .....:		**N/A**
	Test with test probe .....:		**N/A**
2.1.1.2	Battery compartments .....:	No TNV.	**N/A**
2.1.1.3	Access to ELV wiring		**N/A**
	Working voltage (Vpeak or Vrms); minimum distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring		**N/A**
2.1.1.5	Energy hazards .....:		**P**
2.1.1.6	Manual controls		**N/A**
2.1.1.7	Discharge of capacitors in equipment		**N/A**
	Time-constant (s); measured voltage (V).....:		—
2.1.2	Protection in service access areas		**N/A**
2.1.3	Protection in restricted access locations		**N/A**
2.2	SELV circuits		**P**
2.2.1	General requirements	The secondary circuits were tested as SELV. See 2.2.1 to 2.2.4.	**P**
2.2.2	Voltages under normal conditions (V) .....:	42.4V peak or 60Vd.c. are not exceeded in SELV circuit under normal operation.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.3	Voltages under fault conditions (V).....:	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120Vd.c. were not exceeded within 0.2s and limits 42.4V peak and 60Vd.c. were not exceeded for longer than 0.2 s.	**P**
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)		**N/A**
2.2.3.2	Separation by earthed screen (method 2)		**N/A**
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		**N/A**
2.2.4	Connection of SELV circuits to other circuits.....:	See 2.2.2, 2.2.3, 2.3 and 2.4.	**P**
2.3	TNV circuits		**N/A**
2.3.1	Limits		**N/A**
	Type of TNV circuits .....:		—
2.3.2	Separation from other circuits and from accessible parts		**N/A**
	Insulation employed.....:		—
2.3.3	Separation from hazardous voltages		**N/A**
	Insulation employed.....:		—
2.3.4	Connection of TNV circuits to other circuits		**N/A**
	Insulation employed.....:		—
2.3.5	Test for operating voltages generated externally		**N/A**
2.4	Limited current circuits		**P**
2.4.1	General requirements	See below.	**P**
2.4.2	Limit values	See below.	**P**
	Frequency (Hz).....:	See appended table 2.4.2	—
	Measured current (mA).....:	See appended table 2.4.2	—
	Measured voltage (V) .....:	See appended table 2.4.2	—
	Measured capacitance (μF).....:	Less than 0.45μC.	—
2.4.3	Connection of limited current circuits to other circuits	Complied.	**P**
2.5	Limited power sources		**P**
	Inherently limited output		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Impedance limited output	See appended table for USB ports.	**P**
	Overcurrent protective device limited output		**N/A**
	Regulating network limited output under normal operating and single fault condition		**N/A**
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		**N/A**
	Output voltage (V), output current (A), apparent power (VA).....:	See appended table.	—
	Current rating of overcurrent protective device (A)		—
2.6	Provisions for earthing and bonding		**N/A**
2.6.1	Protective earthing		**N/A**
2.6.2	Functional earthing		**N/A**
2.6.3	Protective earthing and protective bonding conductors		**N/A**
2.6.3.1	General		**N/A**
2.6.3.2	Size of protective earthing conductors		**N/A**
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.3	Size of protective bonding conductors		**N/A**
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A).....:		**N/A**
2.6.3.5	Colour of insulation.....:		**N/A**
2.6.4	Terminals		**N/A**
2.6.4.1	General		**N/A**
2.6.4.2	Protective earthing and bonding terminals		**N/A**
	Rated current (A), type and nominal thread diameter (mm).....:		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		**N/A**
2.6.5	Integrity of protective earthing		**N/A**
2.6.5.1	Interconnection of equipment		**N/A**
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		**N/A**
2.6.5.3	Disconnection of protective earth		**N/A**
2.6.5.4	Parts that can be removed by an operator		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.5	Parts removed during servicing		**N/A**
2.6.5.6	Corrosion resistance		**N/A**
2.6.5.7	Screws for protective bonding		**N/A**
2.6.5.8	Reliance on telecommunication network or cable distribution system		**N/A**
2.7	Overcurrent and earth fault protection in primary circuits		**N/A**
2.7.1	Basic requirements		**N/A**
	Instructions when protection relies on building installation		**N/A**
2.7.2	Faults not covered in 5.3		**N/A**
2.7.3	Short-circuit backup protection		**N/A**
2.7.4	Number and location of protective devices .....:		**N/A**
2.7.5	Protection by several devices		**N/A**
2.7.6	Warning to service personnel .....:		**N/A**
2.8	Safety interlocks		**N/A**
2.8.1	General principles		**N/A**
2.8.2	Protection requirements		**N/A**
2.8.3	Inadvertent reactivation		**N/A**
2.8.4	Fail-safe operation		**N/A**
2.8.5	Moving parts		**N/A**
2.8.6	Overriding		**N/A**
2.8.7	Switches and relays		**N/A**
2.8.7.1	Contact gaps (mm) .....:		**N/A**
2.8.7.2	Overload test		**N/A**
2.8.7.3	Endurance test		**N/A**
2.8.7.4	Electric strength test		**N/A**
2.8.8	Mechanical actuators		**N/A**
2.9	Electrical insulation		**P**
2.9.1	Properties of insulating materials	The unit is supplied from an approved power supply or battery pack that provides SELV. Only SELV and limited current circuit inside the unit.	**P**
2.9.2	Humidity conditioning		**N/A**
	Humidity (%) .....:		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Temperature (°C) .....:		—
2.9.3	Grade of insulation		**P**
2.10	Clearances, creepage distances and distances through insulation		**P**
2.10.1	General	The unit is supplied from an approved power supply or battery pack that provides SELV. Only SELV and limited current circuit inside the unit.	**P**
2.10.2	Determination of working voltage		**N/A**
2.10.3	Clearances		**N/A**
2.10.3.1	General		**N/A**
2.10.3.2	Clearances in primary circuits		**N/A**
2.10.3.3	Clearances in secondary circuits		**N/A**
2.10.3.4	Measurement of transient voltage levels		**N/A**
2.10.4	Creepage distances		**N/A**
	CTI tests .....:		—
2.10.5	Solid insulation		**N/A**
2.10.5.1	Minimum distance through insulation		**N/A**
2.10.5.2	Thin sheet material		**N/A**
	Number of layers (pcs) .....:		—
	Electric strength test		—
2.10.5.3	Printed boards		**N/A**
	Distance through insulation		**N/A**
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) .....:		**N/A**
2.10.5.4	Wound components		**N/A**
	Number of layers (pcs) .....:		**N/A**
	Two wires in contact inside wound component; angle between 45° and 90° .....:		**N/A**
2.10.6	Coated printed boards		**N/A**
2.10.6.1	General		**N/A**
2.10.6.2	Sample preparation and preliminary inspection		**N/A**
2.10.6.3	Thermal cycling		**N/A**
2.10.6.4	Thermal ageing (°C) .....:		**N/A**
2.10.6.5	Electric strength test		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.6.6	Abrasion resistance test		**N/A**
	Electric strength test		—
2.10.7	Enclosed and sealed parts .....:		**N/A**
	Temperature T1=T2 + Tma – Tamb +10K (°C)....:		**N/A**
2.10.8	Spacings filled by insulating compound.....:		**N/A**
	Electric strength test		—
2.10.9	Component external terminations		**N/A**
2.10.10	Insulation with varying dimensions		**N/A**
3	WIRING, CONNECTIONS AND SUPPLY		**P**
3.1	General		**P**
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring which is PVC insulated, rated VW-1, minimum 80°C. Internal wiring gauge is suitable for current intended to be carried.	**P**
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges, which could damage the insulation.	**P**
3.1.3	Securing of internal wiring	Internal wires are secured reliable so that a loosening of the terminal connection is unlikely.	**P**
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	**P**
3.1.5	Beads and ceramic insulators		**N/A**
3.1.6	Screws for electrical contact pressure		**N/A**
3.1.7	Insulating materials in electrical connections		**N/A**
3.1.8	Self-tapping and spaced thread screws		**N/A**
3.1.9	Termination of conductors		**N/A**
	10 N pull test		**N/A**
3.1.10	Sleeving on wiring		**N/A**
3.2	Connection to an a.c. mains supply or a d.c. mains supply		**N/A**
3.2.1	Means of connection .....:		**N/A**
3.2.1.1	Connection to an a.c. mains supply		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.1.2	Connection to a d.c. mains supply		**N/A**
3.2.2	Multiple supply connections		**N/A**
3.2.3	Permanently connected equipment		**N/A**
	Number of conductors, diameter (mm) of cable and conduits .....:		—
3.2.4	Appliance inlets		**N/A**
3.2.5	Power supply cords		**N/A**
3.2.5.1	AC power supply cords		**N/A**
	Type.....:		—
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
3.2.5.2	DC power supply cords		**N/A**
3.2.6	Cord anchorages and strain relief		**N/A**
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		**N/A**
3.2.8	Cord guards		**N/A**
	D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm).....:		—
3.2.9	Supply wiring space		**N/A**

3.3	Wiring terminals for connection of external conductors		**N/A**
3.3.1	Wiring terminals		**N/A**
3.3.2	Connection of non-detachable power supply cords		**N/A**
3.3.3	Screw terminals		**N/A**
3.3.4	Conductor sizes to be connected		**N/A**
	Rated current (A), cord/cable type, cross-sectional area (mm^2).....:		—
3.3.5	Wiring terminal sizes		**N/A**
	Rated current (A), type and nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminals design		**N/A**
3.3.7	Grouping of wiring terminals		**N/A**
3.3.8	Stranded wire		**N/A**

3.4	Disconnection from the mains supply		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.1	General requirement		**N/A**
3.4.2	Disconnect devices		**N/A**
3.4.3	Permanently connected equipment		**N/A**
3.4.4	Parts which remain energized		**N/A**
3.4.5	Switches in flexible cords		**N/A**
3.4.6	Single-phase equipment and d.c. equipment		**N/A**
3.4.7	Three-phase equipment		**N/A**
3.4.8	Switches as disconnect devices		**N/A**
3.4.9	Plugs as disconnect devices		**N/A**
3.4.10	Interconnected equipment		**N/A**
3.4.11	Multiple power sources		**N/A**
3.5	Interconnection of equipment		**P**
3.5.1	General requirements	See below.	**P**
3.5.2	Types of interconnection circuits .....:	SELV and LCC.	**P**
3.5.3	ELV circuits as interconnection circuits		**N/A**
4	PHYSICAL REQUIREMENTS		**P**
4.1	Stability		**P**
	Angle of 10°	Compliance.	**P**
	Test: force (N).....:		**N/A**
4.2	Mechanical strength		**P**
4.2.1	General	No hazards after tests.	**P**
4.2.2	Steady force test, 10 N		**N/A**
4.2.3	Steady force test, 30 N		**N/A**
4.2.4	Steady force test, 250 N	Compliance.	**P**
4.2.5	Impact test		**N/A**
	Fall test		**N/A**
	Swing test		**N/A**
4.2.6	Drop test	Compliance.	**P**
4.2.7	Stress relief test	Compliance at 80°C.	**P**
4.2.8	Cathode ray tubes		**N/A**
	Picture tube separately certified .....:		**N/A**
4.2.9	High pressure lamps		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) .....:		**N/A**
4.3	Design and construction		**P**
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	**P**
4.3.2	Handles and manual controls; force (N).....:		**N/A**
4.3.3	Adjustable controls		**N/A**
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress.	**P**
4.3.5	Connection of plugs and sockets	Mismatch of connectors were prevented by incompatible form or location.	**P**
4.3.6	Direct plug-in equipment		**N/A**
	Dimensions (mm) of mains plug for direct plug-in :		**N/A**
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N).....:		**N/A**
4.3.7	Heating elements in earthed equipment		**N/A**
4.3.8	Batteries	For results see appended table 5.3.	**P**
4.3.9	Oil and grease		**N/A**
4.3.10	Dust, powders, liquids and gases		**N/A**
4.3.11	Containers for liquids or gases		**N/A**
4.3.12	Flammable liquids.....:		**N/A**
	Quantity of liquid (l).....:		**N/A**
	Flash point (°C).....:		**N/A**
4.3.13	Radiation; type of radiation .....:	See below.	**P**
4.3.13.1	General	See below.	**P**
4.3.13.2	Ionizing radiation		**N/A**
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		**N/A**
	Part, property, retention after test, flammability classification .....:		**N/A**
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.13.5	Laser (including LEDs)	For ODD, which was approved component and evaluated according to relevant standard for laser product. Others are indicating LEDs used.	**P**
	Laser class .....:	Class 1.	—
4.3.13.6	Other types .....:		**N/A**
4.4	Protection against hazardous moving parts		**P**
4.4.1	General	The rotating part of the build-in DC fan is protected by the enclosure. Other motors only used in approved components and are no accessible to the user.	**P**
4.4.2	Protection in operator access areas	See above.	**P**
4.4.3	Protection in restricted access locations		**N/A**
4.4.4	Protection in service access areas		**N/A**
4.5	Thermal requirements		**P**
4.5.1	Maximum temperatures	See appended table 4.5.1.	**P**
	Normal load condition per Annex L.....:	See Annex L.	**P**
4.5.2	Resistance to abnormal heat		**N/A**
4.6	Openings in enclosures		**P**
4.6.1	Top and side openings		**N/A**
	Dimensions (mm) .....:		—
4.6.2	Bottoms of fire enclosures		**N/A**
	Construction of the bottom .....:		—
4.6.3	Doors or covers in fire enclosures		**N/A**
4.6.4	Openings in transportable equipment	See appended table.	**P**
4.6.5	Adhesives for constructional purposes		**N/A**
	Conditioning temperature (°C)/time (weeks) .....:		—
4.7	Resistance to fire		**P**
4.7.1	Reducing the risk of ignition and spread of flame	See below.	**P**
	Method 1, selection and application of components wiring and materials	Use of materials with the required flammability classes.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Method 2, application of all of simulated fault condition tests		**N/A**
4.7.2	Conditions for a fire enclosure	See below.	**P**
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: - Components in secondary (not supplied by LPS) - Insulated wiring The fire enclosure is required.	**P**
4.7.2.2	Parts not requiring a fire enclosure		**N/A**
4.7.3	Materials		**P**
4.7.3.1	General	See appended table 1.5.1 for PCB.	**P**
4.7.3.2	Materials for fire enclosures	See appended table 1.5.1 for enclosure material.	**P**
4.7.3.3	Materials for components and other parts outside fire enclosures		**N/A**
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2 or better.	**P**
4.7.3.5	Materials for air filter assemblies		**N/A**
4.7.3.6	Materials used in high-voltage components		**N/A**
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		**P**
5.1	Touch current and protective conductor current		**N/A**
5.1.1	General		**N/A**
5.1.2	Equipment under test (EUT)		**N/A**
5.1.3	Test circuit		**N/A**
5.1.4	Application of measuring instrument		**N/A**
5.1.5	Test procedure		**N/A**
5.1.6	Test measurements		**N/A**
	Test voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA) .:		—
5.1.7	Equipment with touch current exceeding 3.5 mA :		**N/A**
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		**N/A**
	Test voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks .....:		**N/A**
5.2	Electric strength		**N/A**
5.2.1	General		**N/A**
5.2.2	Test procedure		**N/A**
5.3	Abnormal operating and fault conditions		**P**
5.3.1	Protection against overload and abnormal operation	See below.	**P**
5.3.2	Motors		**N/A**
5.3.3	Transformers		**N/A**
5.3.4	Functional insulation .....:	Results see appended table.	**P**
5.3.5	Electromechanical components		**N/A**
5.3.6	Simulation of faults	Results see appended table.	**P**
5.3.7	Unattended equipment		**N/A**
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire occurred. No molten metal was emitted.	**P**
6	CONNECTION TO TELECOMMUNICATION NETWORKS		**N/A**
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		**N/A**
6.1.1	Protection from hazardous voltages		**N/A**
6.1.2	Separation of the telecommunication network from earth		**N/A**
6.1.2.1	Requirements		**N/A**
	Test voltage (V) .....:		**—**
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions.....:		**N/A**
6.2	Protection of equipment users from overvoltages on telecommunication networks		**N/A**
6.2.1	Separation requirements		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.2	Electric strength test procedure		**N/A**
6.2.2.1	Impulse test		**N/A**
6.2.2.2	Steady-state test		**N/A**
6.2.2.3	Compliance criteria		**N/A**
6.3	Protection of the telecommunication wiring system from overheating		**N/A**
	Max. output current (A).....:		—
	Current limiting method .....:		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		**N/A**
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		**N/A**
7.2	Protection of equipment users from overvoltages on the cable distribution system		**N/A**
7.3	Insulation between primary circuits and cable distribution systems		**N/A**
7.3.1	General		**N/A**
7.3.2	Voltage surge test		**N/A**
7.3.3	Impulse test		**N/A**
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		**P**
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		**N/A**
A.1.1	Samples.....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C) .....:		**N/A**
A.1.3	Mounting of samples .....:		**N/A**
A.1.4	Test flame (see IEC 60695-11-3)		**N/A**
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		**N/A**
A.1.6	Compliance criteria		**N/A**
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		**P**
A.2.1	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
A.2.2	Conditioning of samples		**N/A**
A.2.3	Mounting of samples ..... :		**N/A**
A.2.4	Test flame (see IEC 60695-11-4)		**N/A**
	Flame A, B or C ..... :		—
A.2.5	Test procedure		**N/A**
A.2.6	Compliance criteria		**N/A**
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4 and 8		**N/A**
	Sample 1 burning time (s) ..... :		—
	Sample 2 burning time (s) ..... :		—
	Sample 3 burning time (s) ..... :		—
A.3	Hot flaming oil test (see 4.6.2)		**N/A**
A.3.1	Mounting of samples		**N/A**
A.3.2	Test procedure		**N/A**
A.3.3	Compliance criterion		**N/A**

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		**N/A**
B.1	General requirements		**N/A**
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		**N/A**
B.3	Maximum temperatures		**N/A**
B.4	Running overload test		**N/A**
B.5	Locked-rotor overload test		**N/A**
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
B.6	Running overload test for d.c. motors in secondary circuits		**N/A**
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		**N/A**
B.7.1	Test procedure		**N/A**
B.7.2	Alternative test procedure; test time (h).....:		**N/A**
B.7.3	Electric strength test		**N/A**
B.8	Test for motors with capacitors		**N/A**
B.9	Test for three-phase motors		**N/A**
B.10	Test for series motors		**N/A**
	Operating voltage (V) .....:		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		**N/A**
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
	Method of protection.....:		—
C.1	Overload test		**N/A**
C.2	Insulation		**N/A**
	Protection from displacement of windings.....:		**N/A**
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		**N/A**
D.1	Measuring instrument		**N/A**
D.2	Alternative measuring instrument		**N/A**
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		**N/A**
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		**N/A**
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		**N/A**
G.1	Summary of the procedure for determining minimum clearances		**N/A**
G.2	Determination of mains transient voltage (V) .....:		**N/A**
G.2.1	AC mains supply		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.2.2	DC mains supply		**N/A**
G.3	Determination of telecommunication network transient voltage (V).....:		**N/A**
G.4	Determination of required withstand voltage (V)...:		**N/A**
G.5	Measurement of transient levels (V).....:		**N/A**
G.6	Determination of minimum clearances.....:		**N/A**
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		**N/A**
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		**N/A**
	Metal used .....:		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		**N/A**
K.1	Making and breaking capacity		**N/A**
K.2	Thermostat reliability; operating voltage (V) .....:		**N/A**
K.3	Thermostat endurance test; operating voltage (V) .....:		**N/A**
K.4	Temperature limiter endurance; operating voltage (V) .....:		**N/A**
K.5	Thermal cut-out reliability		**N/A**
K.6	Stability of operation		**N/A**
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		**P**
L.1	Typewriters		**N/A**
L.2	Adding machines and cash registers		**N/A**
L.3	Erasers		**N/A**
L.4	Pencil sharpeners		**N/A**
L.5	Duplicators and copy machines		**N/A**
L.6	Motor-operated files		**N/A**
L.7	Other business equipment	See copy of marking plate.	**P**
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		**N/A**
M.1	Introduction		**N/A**
M.2	Method A		**N/A**
M.3	Method B		**N/A**
M.3.1	Ringing signal		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA).....:		—
M.3.2	Tripping device and monitoring voltage.....:		**N/A**
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		**N/A**
M.3.2.2	Tripping device		**N/A**
M.3.2.3	Monitoring voltage (V).....:		**N/A**
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		**N/A**
N.1	ITU-T impulse test generators		**N/A**
N.2	IEC 60065 impulse test generator		**N/A**
P	ANNEX P, NORMATIVE REFERENCES		**P**
Q	ANNEX Q, BIBLIOGRAPHY		**N/A**
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		**N/A**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		**N/A**
R.2	Reduced clearances (see 2.10.3)		**N/A**
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		**N/A**
S.1	Test equipment		**N/A**
S.2	Test procedure		**N/A**
S.3	Examples of waveforms during impulse testing		**N/A**
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		**N/A**
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		**N/A**
			—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		**N/A**
V.1	Introduction		**N/A**
V.2	TN power distribution systems		**N/A**
V.3	TT power systems		**N/A**
V.4	IT power systems		**N/A**
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		**N/A**
W.1	Touch current from electronic circuits		**N/A**
W.1.2	Earthed circuits		**N/A**
W.2	Interconnection of several equipments		**N/A**
W.2.1	Isolation		**N/A**
W.2.2	Common return, isolated from earth		**N/A**
W.2.3	Common return, connected to protective earth		**N/A**
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		**N/A**
X.1	Determination of maximum input current		**N/A**
X.2	Overload test procedure		**N/A**
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		**N/A**
Y.1	Test apparatus .....:		**N/A**
Y.2	Mounting of test samples .....:		**N/A**
Y.3	Carbon-arc light-exposure apparatus .....:		**N/A**
Y.4	Xenon-arc light exposure apparatus .....:		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)			**P**
General	C: Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.6 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2	Deleted.	**P**
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	No direct connection to the mains supply.	**N/A**
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	No such switch.	**N/A**
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Class III equipment.	**N/A**
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:	Class III equipment.	**N/A**
	FI: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"	Class III equipment.	**N/A**
	NO: "Apparatet må tilkoples jordet stikkontakt"	Class III equipment.	**N/A**
	SE: "Apparaten skall anslutas till jordat uttag"	Class III equipment.	**N/A**
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket eller	Class III equipment.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende instalationsvejledning."		
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	No socket-outlets.	**N/A**
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	Class III equipment.	**N/A**
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, 4th paragraph item 2): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	Shall be evaluated during national approval.	**N/A**
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	Battery pack and RTC battery are in compliance with requirements of IEC 60950-1. Overall compliance needs to be evaluated during the national approval process.	**N/A**
	A (DE, Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and	This national difference was deleted by A11 of EN 60950-1.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		**N/A**
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.		**N/A**
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		**N/A**
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.		**N/A**
2.7.1	C: Replace the subclause as follows: *Basic requirements* To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.		**N/A**
2.7.2	C: Void.	Declared.	**N/A**
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Replaced.	**N/A**
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.1.1	S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A		**N/A**
	S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If ply-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		**N/A**
	S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		**N/A**
	S (GB): Apparatus which is fitted with a flexible		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		
	S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		**N/A**
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Deleted.	**N/A**
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 0,75[1)] Over 6 up to and including 10 (0,75)[2)] 1,0 Over 10 up to and including 16 (1,0)[3)] 1,5 In the Conditions applicable to Table 3B delete the words "in some countries" in condition [1)]. In Note 1, applicable to Table 3B, delete the second sentence.		**N/A**
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm^2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		**N/A**
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 1,5 to 2,5 1,5 to 4" Delete the fifth line: conductor sizes for 13 to 16 A.	Deleted.	**N/A**
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.		**N/A**
	S (IE): DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		**N/A**
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	Added.	**N/A**
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTINGE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.		**N/A**
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		**N/A**
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		**N/A**
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.		**N/A**
Annex P	C: Replace the text of this annex by: See annex ZA.		**P**
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified)		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		
Annex ZA	C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.		**P**

—	IEC 60050-151
—	IEC 60050-195
EN 60065:1998 + corr. June 1999	IEC 60065 (mod):1998
EN 60073:1996	IEC 60073:1996
HD 566 S1:1990	IEC 60085:1984
HD 214 S2:1980	IEC 60112:1979
HD 611.4.1.S1:1992	IEC 60216-4-1:1990
HD 21 [1)] Series	IEC 60227 (mod) Series
HD 22 [2)] Series	IEC 60245 (mod) Series
EN 60309 Series	IEC 60309 Series
EN 60317-43:1997	IEC 60317-43:1997
EN 60320 Series	IEC 60320 (mod) Series
HD 384.3 S2:1995	IEC 60364-3 (mod):1993
HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 [3)]
EN 132400:1994 [4)] + A2:1998 + A3:1998 + A4:2001	IEC 60384-14:1993
EN 60417-1	IEC 60417-1
HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992
EN 60695-2-2:1994	IEC 60695-2-2:1991
EN 60695-2-11:2001	IEC 60695-2-11:2000
—	IEC 60695-2-20:1995
—	IEC 60695-10-2:1995
—	IEC 60695-11-3:2000
—	IEC 60695-11-4:2000
EN 60695-11-10:1999	IEC 60695-11-10:1999
EN 60695-11-20:1999	IEC 60695-11-20:1999
EN 60730-1:2000	IEC 60730-1:1999 (mod)
EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993
EN 60825-2:2000	IEC 60825-2:2000
—	IEC 60825-9:1999
EN 60851-3:1996	IEC 60851-3:1996
EN 60851-5:1996	IEC 60825-5:1996
EN 60851-6:1996	IEC 60851-6:1996
—	IEC 60885-1:1987
EN 60990:1999	IEC 60990:1999
—	IEC 61058-1:2000
EN 61965:2001	IEC 61965:2000
EN ISO 178:1996	ISO 178:1993
EN ISO 179 Series	ISO 179 Series

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	EN ISO 180:2000 — ISO 180:1993 — — ISO 261:1998 — — ISO 262:1998 EN ISO 527 Series — ISO 527 Series — — ISO 386:1984 EN ISO 4892 Series — ISO 4892 Series — — ISO 7000:1989 EN ISO 8256:1996 — ISO 8256:1990 — — ISO 9772:1994 EN ISO 9773:1998 — ISO 9773:1998 — — ITU-T:1988 Recommendation K.17 — — ITU-T:2000 Recommendation K.21 1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

1.5.1	TABLE: list of critical components				P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity [1.]
AC Adapter	Li Shin	0335A1965	Input rated: 100-240Vac, 50-60Hz, 1.7A Output rated: 19 Vdc, 3.42A min. Class I, 40°C	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV, CB by TÜV
	Delta	ADP-65HB BB	Input rated: 100-240Vac, 50-60HZ, 1.5A Output rated: 19 Vdc, 3.42A min. Class I, 40°C, LPS	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV, CB by TÜV
PTC provided for USB ports (F1, F2 for main board MS-16821) (F2, F3 for main board MS-16831)	Raychem	miniSMDC150F	6Vdc, Ih=1.5A, It=3A	IEC/EN 60730-1	TÜV
	Bourns Inc	MF-MSMF150	6Vdc, Ih=1.5A, It=3A.	IEC/EN 60730-1	TÜV
DC Fan	Forcecon	DFS451205M10T	5Vdc, 0.4A, 4.2CFM	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV
RTC Battery (Lithium)(BAT1)	Vic-Dawn Enterprise Co Ltd	CR2032	3Vdc, max. abnormal charging current 10mA,	UL 1642	UL
	Matsushita Electric Industrial Co Ltd; Panasonic Corp Of North America	CR2032	3Vdc, max. abnormal charging current 10mA,	UL 1642	UL
Enclosure	SABIC Innovative plastics JAPAN L C C	C7230P	V-0, overall 374 by 247.5 by 35mm, min. 1.2mm thickness, 85°C	UL 94	UL
Hard Disk Drive (Optional)	Fujitsu Ltd	MHZ2xxxBz (x= 0-9, A-Z or a-z; z= A, H or S)	5Vdc, 0.6A	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV

	Fujitsu Ltd	MJA2xxxBA (x=0-9 or A-Z)	5Vdc, 0.6A	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV
	Western Digital	WD series	5Vdc, 1.0A	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV
	Toshiba	HDD2yyyx (x= A-Z, y=0-9 or A-Z)	5Vdc, 1.1A or 5Vdc, 3.3Vdc/ 0.7A, 0.5A	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV
O.D.D (CD-RW /DVD ROM Drive) (Optional)	Sony Nec	AD-7580S	Rated :5Vdc,1.5A, Laser Class 1	IEC/EN 60950-1:2001 IEC/EN 60825-1 /A1+A2	TÜV
	Hitachi-LG Date Storage	GT10N	Rated :5Vdc, 1.8A, Laser Class 1	IEC/EN 60950-1:2001 IEC/EN 60825-1 /A1+A2	TÜV
	Toshiba	TS-L633	Rated :5Vdc, 1.5A or 1.3A, Laser Class 1	IEC/EN 60950-1:2001 IEC/EN 60825-1 /A1+A2	TÜV
	Philips & Lite-On	DS-8A2S	Rated :5Vdc,1.5A, Laser Class 1	IEC/EN 60950-1:2001 IEC/EN 60825-1 /A1+A2	TÜV
DC/AC inverter	Sampo Corp.	YIVNMS0018D 11-B	I/P: 20Vdc, 740mA max. O/P: 850Vrms, 6.5mA max.	--	--
- Transformer (PT1)	Top Nation, Yao Sheng	YCVT-1619ID-Z-A	105°C	--	--
- Capacitor (C13)	--	--	150pF, 2KV	--	--
DC/AC inverter	Mitac Technology Corp.	DA-1A08-MS02L	I/P: 20 dc, 850mA max. O/P: 1400Vrms, 6.5mA max.	--	--
- Transformer (T1)	Top Nation, Yao Sheng	273001051551	105°C	--	--
- Capacitor (C3)	--	--	100pF, 2KV	--	--

DC/AC inverter	Taiwan Sumida Electronics Inc	IV14080/T-LF	I/P: 14.4Vdc, 450mA max. O/P: 1600Vrms, 6.5mA max.	--	--
- Transformer (T1)	Taiwan Sumida Electronics Inc	CL-14080TDZ-LF	105°C	--	--
- Capacitor (C14)	--	--	100pF, 2KV	--	--
TFT LCD panel	Chi Mei	N156B3-L01, N156B3-L02	15.6", TFT	--	--
	Samsung	LTN160AT01-A01, LTN160AT01-A02, LTN160AT01-A04	16", TFT	--	--
Battery Pack	Celxpert Energy Corp	BTY-L74	11.1Vdc, 4.4Ah, 40°C	EN 60950-1: 2001+A11 IEC 60950-1: 2001	TÜV
Speaker (Two Provided)	--	--	4Ω, 2W	--	--
PCB	--	--	V-1, 105°C	UL94	UL
Note(s): 1. An asterisk indicates a mark that assures the agreed level of surveillance.					

1.6.2	TABLE: electrical data (in normal conditions)					**P**
Fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
For main board MS-16821						
--	3.42	DC 19	61.94	3.26	--	DC/AC Inverter SAMPO, YIVNMS0018D11-B
--	3.42	DC 19	62.32	3.28	--	DC/AC Inverter Mitac, DA-1A08-MS02L
--	3.42	DC 19	62.32	3.28	--	DC/AC Inverter Sumida, IV14080/T-LF
For main board MS-16831						
--	3.42	DC 19	63.46	3.34	--	DC/AC Inverter SAMPO, YIVNMS0018D11-B
--	3.42	DC 19	63.46	3.34	--	DC/AC Inverter Mitac, DA-1A08-MS02L
--	3.42	DC 19	63.27	3.33	--	DC/AC Inverter Sumida, IV14080/T-LF
Note(s):						

2.1.1.5	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Note(s):					

2.1.1.7	TABLE: discharge test			N/A
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
Note(s):				

2.2.2	TABLE: Hazardous voltage measurement			N/A
Transformer	Location	max. Voltage		Voltage Limitation Component
		V peak	V d.c.	
Note(s):				

2.2.3	TABLE: SEL voltage measurement		N/A
Location	Voltage measured (V)	Comments	
Note(s):			

2.4.2	TABLE: limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	
Test for DC/AC inverter: Sampo / YIVNMS0018D11-B						
Normal condition						
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.	
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.	
CN2 Pin 2-Earth	2.94	1.47	58	40.6		
PT1 pin 5-6	--	--	--	--	Unit shut down immediately.	
PT1 pin 5-Earth	--	--	--	--	Unit shut down immediately.	
PT1 pin 6-Earth	1.86	0.93	52	36.4		
C13 shorted						
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.	
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.	

CN2 Pin 2-Earth	2.98	1.49	59	41.3	
PT1 pin 5-6	--	--	--	--	Unit shut down immediately.
PT1 pin 5-Earth	--	--	--	--	Unit shut down immediately.
PT1 pin 6-Earth	--	--	--	--	Unit shut down immediately.
C21 shorted or C9 shorted or Q1 pin 2-6 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2-Earth	--	--	--	--	Unit shut down immediately.
PT1 pin 5-6	--	--	--	--	Unit shut down immediately.
PT1 pin 5-Earth	--	--	--	--	Unit shut down immediately.
PT1 pin 6-Earth	--	--	--	--	Unit shut down immediately.
Test for DC/AC inverter: Mitac / DA-1A08-MS02L					
Normal condition					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	2.84	1.42	21	14.7	
T1 pin 3-4	--	--	--	--	Unit shut down immediately.
T1 pin 3-Earch	1.98	0.99	21	14.7	
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
C3 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	2.88	1.44	22	15.4	
T1 pin 3-4	--	--	--	--	Unit shut down immediately.
T1 pin 3-Earch	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
C6 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	2.78	1.39	22	15.4	
T1 pin 3-4	--	--	--	--	Unit shut down immediately.
T1 pin 3-Earch	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
R15 shorted or U1 pin 2-6 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.

CN2 Pin 2- Earth	--	--	--	--	Unit shut down immediately.
T1 pin 3-4	--	--	--	--	Unit shut down immediately.
T1 pin 3-Earch	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
Test for DC/AC inverter: Sumida / IV14080/T-LF					
Normal condition					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	2.82	1.41	47.02	32.91	
T1 pin 4-5	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	1.78	0.89	55.12	38.58	
T1 pin 5-Earch	--	--	--	--	Unit shut down immediately.
C14 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	2.98	1.49	48.62	34.03	
T1 pin 4-5	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
T1 pin 5-Earch	--	--	--	--	Unit shut down immediately.
R4 shorted or R9 shorted or Q3 pin 2-6 shorted					
CN2 Pin 1-2	--	--	--	--	Unit shut down immediately.
CN2 Pin 1-Earth	--	--	--	--	Unit shut down immediately.
CN2 Pin 2- Earth	--	--	--	--	Unit shut down immediately.
T1 pin 4-5	--	--	--	--	Unit shut down immediately.
T1 pin 4-Earch	--	--	--	--	Unit shut down immediately.
T1 pin 5-Earch	--	--	--	--	Unit shut down immediately.
Note(s):					

2.5	TABLE: limited power source measurement		**P**
	Limits	Measured	Verdict
For main board MS-16821			
According to Table 2B (normal condition), For USB ports, Uoc=5.05V			
current (in A)	8	2.8	P
apparent power (in VA)	5*Uoc	10.86	P
For main board MS-16831			
According to Table 2B (normal condition), For USB ports, Uoc=5.03V			

current (in A)	8	2.6	P
apparent power (in VA)	5*Uoc	9.49	P
Note(s): 1. The all protection circuits of USB 5V output are same design, only wrong test data be written.			

2.6.3.4	TABLE: ground continue test	**N/A**

Location	Resistance measured (mΩ)	Comments
Note(s):		

2.10.2	Table: working voltage measurement	**N/A**

Location	RMS voltage (V)	Peak voltage (V)	Comments
Note(s):			

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements	**N/A**

Clearance cl and creepage distance dcr at/of:	U p (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Note(s):						

2.10.5	TABLE: distance through insulation measurements	**N/A**

Distance through insulation di at/of:	U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)
Note(s):				

4.5.1	TABLE: maximum temperatures			**P**
	test voltage (V) .....:	A) DC 19V B) Power from battery pack		—
	t1 (°C) .....:	--		—
	t2 (°C) .....:	--		—
Maximum temperature T of part/at:		T (°C)		allowed T_{max} (°C)
Test condition		A)	B)	--
For main board MS-16821				
PCB near U25 (CPU)		75.5	68.5	105

PCB near U22	72.0	67.5	105
PCB near U32	81.0	75.9	105
RTC battery (BAT1)	73.8	72.4	--
H.D.D body	66.3	62.3	--
CD-ROM body	53.1	52.0	--
Battery pack body	44.2	58.4	75
T1 coil (DC/AC Inverter, Mitac / DA-1A08-MS02L)	79.2	76.2	105
Enclosure inside near U25 (plastic)	68.5	63.7	85
Enclosure outside near U25 (plastic)	62.3	57.2	75
Tma (Tamb)	40.0 (26.4)	40.0 (26.1)	--
PT1 coil (DC/AC Inverter, Sampo / YIVNMS0018D11-B)	80.8	--	105
Tma (Tamb)	40.0 (25.8)	--	--
T1 coil (DC/AC Inverter, Sumida / IV14080/T-LF)	72.8	--	105
Tma (Tamb)	40.0 (25.1)	--	--
For main board MS-16831			
PCB near U13 (CPU)	70.2	69.3	105
PCB near U14	73.3	72.6	105
RTC battery (BAT1)	61.3	59.7	--
H.D.D body	51.1	56.3	--
CD-ROM body	53.6	52.6	--
Battery pack body	43.9	56.6	75
T1 coil (DC/AC Inverter, Mitac / DA-1A08-MS02L)	78.7	75.2	105
Enclosure inside near U13 (plastic)	60.6	61.2	85
Enclosure outside near U13 (plastic)	56.3	55.5	75
Tma (Tamb)	40.0 (26.2)	40.0 (26.9)	--
PT1 coil (DC/AC Inverter, Sampo / YIVNMS0018D11-B)	76.2	--	105
Tma (Tamb)	40.0 (25.9)	--	--
T1 coil (DC/AC Inverter, Sumida / IV14080/T-LF)	72.0	--	105
Tma (Tamb)	40.0 (25.6)	--	--

Temperature T of winding:	R_1 (Ω)	R_2 (Ω)	T (°C)	allowed T_{max} (°C)	insulation class

Note(s):

1. All values for T (°C) are re-calculated from actual ambient respectively.

4.5.2	TABLE: ball pressure test of thermoplastic parts		**N/A**
	allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Note(s):		

4.6.1, 4.6.2	Table: enclosure openings	**P**
Location	Size (mm)	Comments
Front side	11.0 x 1.5	30 openings for speakers
Left side	9.5 x 4.5	8 openings for heatsink.
Rear side	7.0 x 3.0	Kensington Lock Hole, internal plastic enclosure as barrier.
Bottom	Max. 16.0 x 0.95	Numerous openings.
Other sides	None	--
Note(s):		

4.7	Table: resistance to fire			**P**
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class
Note(s): see appended table 1.5.1 for details.				

5.1.6	TABLE: touch current measurement			**N/A**
Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments
Note(s):				

5.2	TABLE: electric strength tests and impulse tests		**N/A**
Test voltage applied between:		Test voltage (V)	Breakdown
Note(s):			

5.3	TABLE: fault condition tests		**P**
	ambient temperature (°C) .....:	See below	—
	model/type of power supply .....:	See appended table 1.5.1.	—
	manufacturer of power supply .....:	See appended table 1.5.1.	—
	rated markings of power supply .....:	See appended table 1.5.1.	—

No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
For main board MS-16821							
1.	CPU Fan	locked	DC 19	4.5hrs	--	--	Unit shutdown, no damaged, no hazards, temp. was stable, U22= 83.8°C, ambient= 24.8°C
2.	Ventilation openings	blocked	DC 19	7.5hrs	--	--	Unit shutdown, no damaged, no hazards, temp. was stable, U32= 98.6°C, ambient= 25.8°C
3.	DT1 pin X-Z	s-c	DC 19	1min	--	--	For RTC battery, abnormal charging current= 2.96mA.
4.	DT1 pin X-Y	s-c	DC 19	1min	--	--	For RTC battery, abnormal charging current= 3.24mA.
5.	R104	s-c	DC 19	1min	--	--	For RTC battery, no abnormal charging current.
For main board MS-16831							
6.	CPU Fan	locked	DC 19	3hrs	--	--	Unit shutdown, no damaged, no hazards, temp. was stable, U13= 84.7°C, ambient= 25.8°C
7.	Ventilation openings	blocked	DC 19	3.5hrs	--	--	Unit shutdown, no damaged, no hazards, temp. was stable, U13= 79.1°C, ambient= 24.9°C
8.	D17 pin X-Z	s-c	DC 19	1min	--	--	For RTC battery, abnormal charging current= 2.94mA.
9.	D17 pin X-Z	s-c	DC 19	1min	--	--	For RTC battery, abnormal charging current= 3.19mA.
10.	R173	s-c	DC 19	1min	--	--	For RTC battery, no abnormal charging current.

Note(s):

1. In fault column: s-c=short-circuited.

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Australian National Differences according to CB Bulletin No. 112A, December 2006 (AS/NZS 60950.1:2003) (IEC Publication 60950-1:2001)	**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.		
Annex ZZ Variations		
1.2	Between the definitions for "Person, service" and "Range, rated frequency" insert the following: Potential ignition source 1.2.12.201	Inserted. **N/A**
1.2.12.15	After the definition of 1.2.12.15, add the following: 1.2.12.201 Potential ignition source: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a potential ignition source. NOTE 202: This definition is from AS/NZS 60065:2003.	Added. **N/A**
1.5.1	Add the following to the end of first paragraph: "or the relevant Australian/New Zealand Standard."	Added. **N/A**
1.5.2	Add the following to the end of first and third dash items: "or the relevant Australian/New Zealand Standard."	Added. **N/A**
2.1	Delete the Note.	Deleted. **N/A**
3.2.3	Delete Note 2.	Deleted. **N/A**
3.2.5	Modify Table 3B as follows:	Modified. **N/A**

Rated current of equipment A	Nominal cross-sectional area mm^2	AWG or kcmil (cross-sectional area in mm^2) see note 2
Over 0.2 up to and including 3	0.5[1)]	18 [0.8]

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	Over 3 up to and including 7.5 | 0.75 | 16 [1.3]		
	Over 7.5 up to and including 10 | (0.75)[2] 1.00 | 16 [1.3]		
	Over 10 up to and including 16 | (1.0)[3] 1.5 | 14 [2]		
	Replace footnote 1) with the following: [1] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliances, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191). Delete Note 1.		
4.3.6	Replace paragraph three with: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Replaced.	**N/A**
4.3.13.5	Add the following to the end of the first paragraph: ", or AS/NZS 2211.1"	Added.	**N/A**
4.7	Add the following paragraph: For alternative tests refer to clause 4.7.201.	Added. The clause 4.7.201 was not tested.	**N/A**
4.7.201	Add the following after clause 4.7.3.6: 4.7.201 Resistance to fire - Alternative tests	Added.	**N/A**
4.7.201.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: (a) Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NSZ 4695.707 and having openings only for the connecting wires filling the openings completely, and for the ventilation not exceeding 1 mm in width regardless of the length. (b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which	Equipment under test and materials used materials and components in compliance with requirements of IEC 60950-1. 4.7.201.1 was not considered.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material flammability category FV-1 or better according to AS/NZS 4695.707 NOTE - In considering how to minimize propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance is checked by tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base materials of printed boards, compliance is checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material, which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation, as they would be in normal use. These tests are not carried out on internal wiring.		
4.7.201.2	Parts of non-metallic material are subjected to glow wire test of AS/NZS 4695.2.11, which is carried out at 550 °C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of materials classified at least FH-3 according to ISO 9772 provided that the sample was not thicker than the relevant part.	Equipment under test and materials used materials and components in compliance with requirements of IEC 60950-1. 4.7.201.1 was not considered.	**N/A**
4.7.201.3	Testing of insulating materials Parts of insulating materials supporting potential ignition sources shall be subject to the glow-wire test of AN/NZS 4695.2.11, which is carried out at 750 °C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE - Contacts in components such as switch contacts are considered to be connections. For parts, which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical	Equipment under test and materials used materials and components in compliance with requirements of IEC 60950-1. 4.7.201.1 was not considered.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications: **5 Severities** Replace with: The duration of application of the test flame shall be 30 s ± 1 s. **8 Test procedure** 8.2 Modification: Replace the first sentence with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. 8.4 Modification: The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner. 8.5 Replacement: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test. **10 Evaluation of test results** Replace with: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.		

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow-wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 is made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not to be tested. NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirement of clause 4.7.201 without the need for consequential testing. NOTE 2 - If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burring or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirement of clause 4.7.201 without the need for consequential testing. NOTE 3 - Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting in contact with or in close proximity to connections.	Equipment under test and materials used materials and components in compliance with requirements of IEC 60950-1. 4.7.201.1 was not considered.	**N/A**
4.7.201.5	Testing of printed boards The base material of printed boards is subjected to needle-flame test to Clause 4.7.201.3. The flame is applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm for a potential ignition source. The test is not carried out if the – - Printed board does not carry any potential ignition source; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0	Equipment under test and materials used materials and components in compliance with requirements of IEC 60950-1. 4.7.201.1 was not considered.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the opening completely, or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material printed boards supporting spark gaps which provide protection against overvoltages, is of flammability category FV-0 according to AS/NSZ 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires fill the openings completely. Compliance is determined using the smallest thickness of the material. NOTE - Available apparent power is the maximum apparent power, which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected.		
6.2.2	Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2. Delete the note.	Added.	**N/A**
6.2.2.1	Delete Note 2. Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700 μs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc, is: - for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and - for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 - The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The 2.5 kV impulse for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate	Deleted.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	likely overvoltages.		
6.2.2.2	Delete the note. Add the following after the second paragraph: In Australia (this variation does not apply in New Zealand), the a.c. test voltage is: - for 6.2.1a): 3 kV; and - for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 – Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 – The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.	Deleted.	**N/A**
Annex P	Add the following Normative References to Annex P: IEC 60065, Audio, Video and similar electronic apparatus - Safety requirements AS/NZS 3112, Approval and test specification - Plugs and socket-outlets AS/NZS 3191, Approval and test specification - Electric flexible cords AS/NZS 4695.707, Fire hazard testing of electrotechnical products - Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source	Added.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Canadian National Differences according to CB Bulletin No. 112A, December 2006 (CAN/CSA C22.2 No. 60950-1/UL60950-1) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70,the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Equipment was evaluated according to IEC 60950-1. The requirement have to be checking to national approval.	**N/A**
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Class III equipment.	**N/A**
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	No supply cords provided.	**N/A**
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 “Normal Operating Conditions.” Likewise, a voltage rating shall not be lower than the specified “Normal Operating Conditions,” unless it is part of a range that extends into the “Normal Operating Conditions.”	Class III equipment.	**N/A**
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse used.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection.	No such outlet provided.	**N/A**
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Class III equipment.	**N/A**
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No such cords provided.	**N/A**
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection equipment.	**N/A**
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No such cords provided.	**N/A**
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanent connection equipment.	**N/A**
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No such terminal used.	**N/A**
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No such terminal used.	**N/A**
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	No such terminal used.	**N/A**
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12A, or if the motor has a nominal voltage rating greater than 120V, or is rated more than 1/3 hp (locked rotor current over 43 A)	No motor used.	**N/A**
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the ”on” position indicated by the handle in the up position.	No such switches used.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not for computer room used.	**N/A**
4.3.12	The maximum quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid used.	**N/A**
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers.	**N/A**
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not for computer room used.	**N/A**
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	Not for computer room used.	**N/A**
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	**N/A**
Other differences			
1.5.1	Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply. The acceptance will be based on the following: A) A component Certified by a Canadian or U.S. National Certification Body (NCB) to a Canadian or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subject to the applicable tests of the equipment standard. B) A component, which has a CB Test Certificate for compliance with a relevant IEC component standard, will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subject to the applicable tests of the equipment standard, and to the applicable	Components are UL or CSA approved, see component list 1.5.1.	**P**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. C) A component, which has no approval as in A) or B) above or which is used not in accordance with its specified ratings, will be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. D) Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory		
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mAd.c. under normal operating conditions.	No TNV circuits.	**N/A**
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits.	**N/A**
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	Class III equipment.	**N/A**
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, writing, marking and installation instruction requirements.	Not connected to DC mains.	**N/A**
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT used.	**N/A**
4.3.2	Equipment with handles is required to comply with special loading tests.	No such handles used.	**N/A**
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuit.	**N/A**
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	No TNV circuit.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuit.	**N/A**
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No TNV circuit.	**N/A**
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuit.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Korean National Differences according to CB Bulletin No. 112A, December 2006 (K60950) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	Class III equipment.	**N/A**
7	Addition: EMC The apparatus shall comply with the relevant CISPR standards.	To be evaluated when submitted for national approval.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	US National Differences according to CB Bulletin No. 112A, December 2006 (UL 60950-1) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70,the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Equipment in compliance with IEC 60950-1. Overall acceptance has to be evaluated during the national approval process.	**N/A**
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Class III equipment.	**N/A**
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	No supply cord provided.	**N/A**
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 “Normal Operating Conditions.” Likewise, a voltage rating shall not be lower than the specified “Normal Operating Conditions,” unless it is part of a range that extends into the “Normal Operating Conditions.”	Class III equipment.	**N/A**
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse used.	**N/A**
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch	No such outlets provided.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection.		
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Class III equipment.	**N/A**
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No such cords provided for this country.	**N/A**
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection equipment.	**N/A**
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No such cords provided for this country.	**N/A**
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanent connection equipment.	**N/A**
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No such terminal used.	**N/A**
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No such terminal used.	**N/A**
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	No such terminal used.	**N/A**
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12A, or if the motor has a nominal voltage rating greater than 120V, or is rated more than 1/3 hp (locked rotor current over 43 A)	No motor used.	**N/A**
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the ”on” position indicated by the handle in the up position.	No such switches used.	**N/A**
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not for computer room.	**N/A**
4.3.12	The maximum quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid used.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers.	**N/A**
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not for computer room.	**N/A**
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	Not for computer room.	**N/A**
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	**N/A**
Other differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches (including interlock switches), thermal cut-offs, thermostats, multi-layer transformer winding wire, tubing, wire connectors, and wire and cables.	Components are UL or CSA approved, see component list 1.5.1.	**P**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits.	**N/A**
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits.	**N/A**
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	Class III equipment.	**N/A**
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, writing, marking and installation instruction requirements.	Not connected to DC mains.	**N/A**
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT used.	**N/A**
4.3.2	Equipment with handles is required to comply with special loading tests.	No such handles used.	**N/A**
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuit.	**N/A**
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	No TNV circuit.	**N/A**
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuit.	**N/A**
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No TNV circuit.	**N/A**
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuit.	**N/A**